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Lind

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(54) **METHOD AND DEVICES FOR THE TREATMENT OF SKIN LESIONS**

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(51) **Int. Cl.**

A61B 18/02	(2006.01)
A61B 18/00	(2006.01)
A61B 17/28	(2006.01)

(52) **U.S. Cl.**
CPC ***A61B 18/02*** (2013.01); *A61B 18/0218* (2013.01); *A61B 2018/0225* (2013.01)

(58) **Field of Classification Search**
USPC 606/20, 21
See application file for complete search history.

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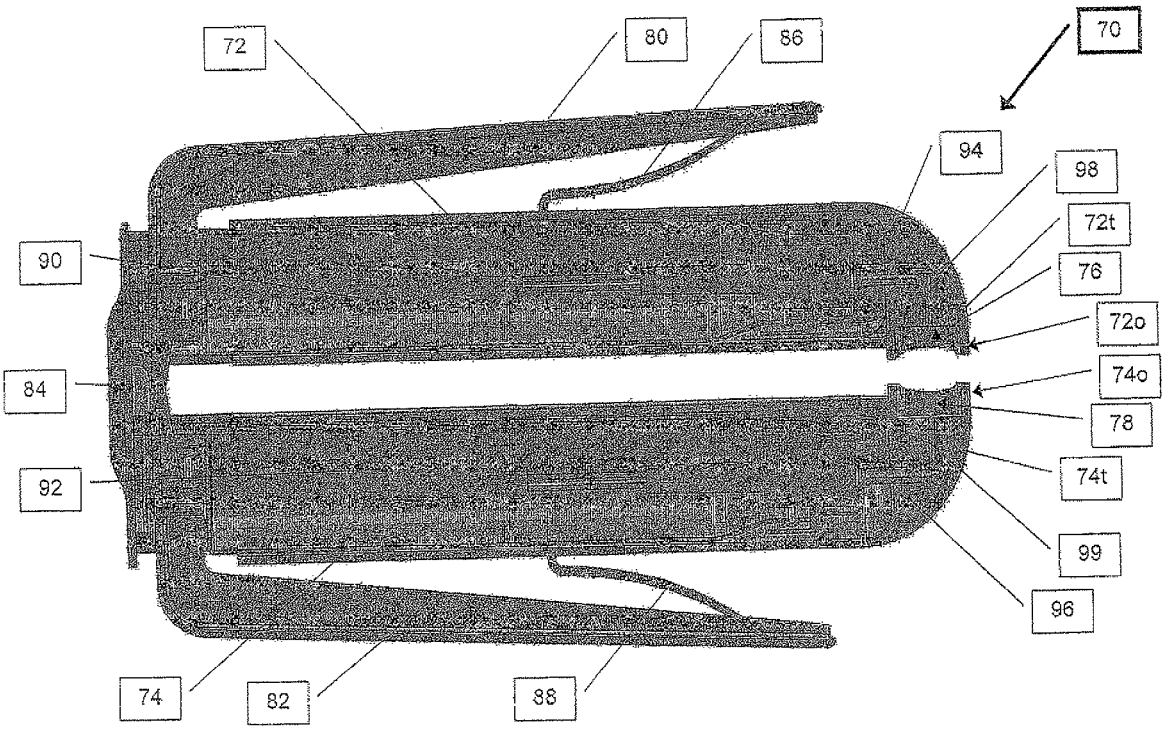
(57) **ABSTRACT**

A tweezers device for the application of cryogenic matter directly on a skin lesion while protecting the collateral skin tissue from being damaged by the cryogenic matter, the device comprising an applicator body configured with opposing tweezer arms, each tweezer arm including a cryogenic matter application element such that when the opposing tweezer arms are closed about the skin lesion, the skin lesion is substantially encased by the cryogenic matter application elements.

12 Claims, 17 Drawing Sheets



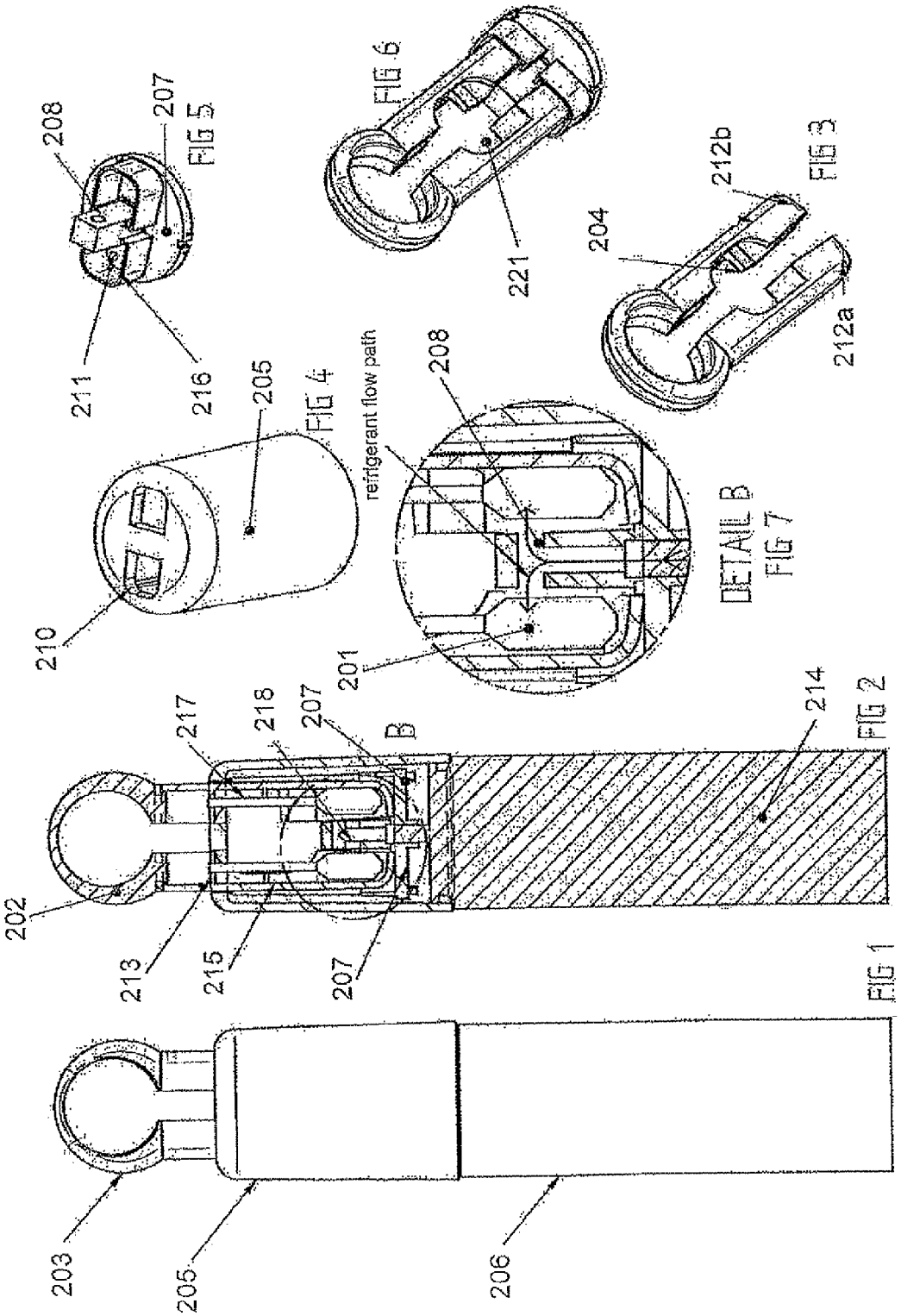


FIG 1
FIG 2
FIG 3
FIG 4
FIG 5
FIG 6
DETAIL B
FIG 7
refrigerant flow path
202
203
205
206
207
208
210
211
212a
212b
213
214
215
216
217
218
221
201
204

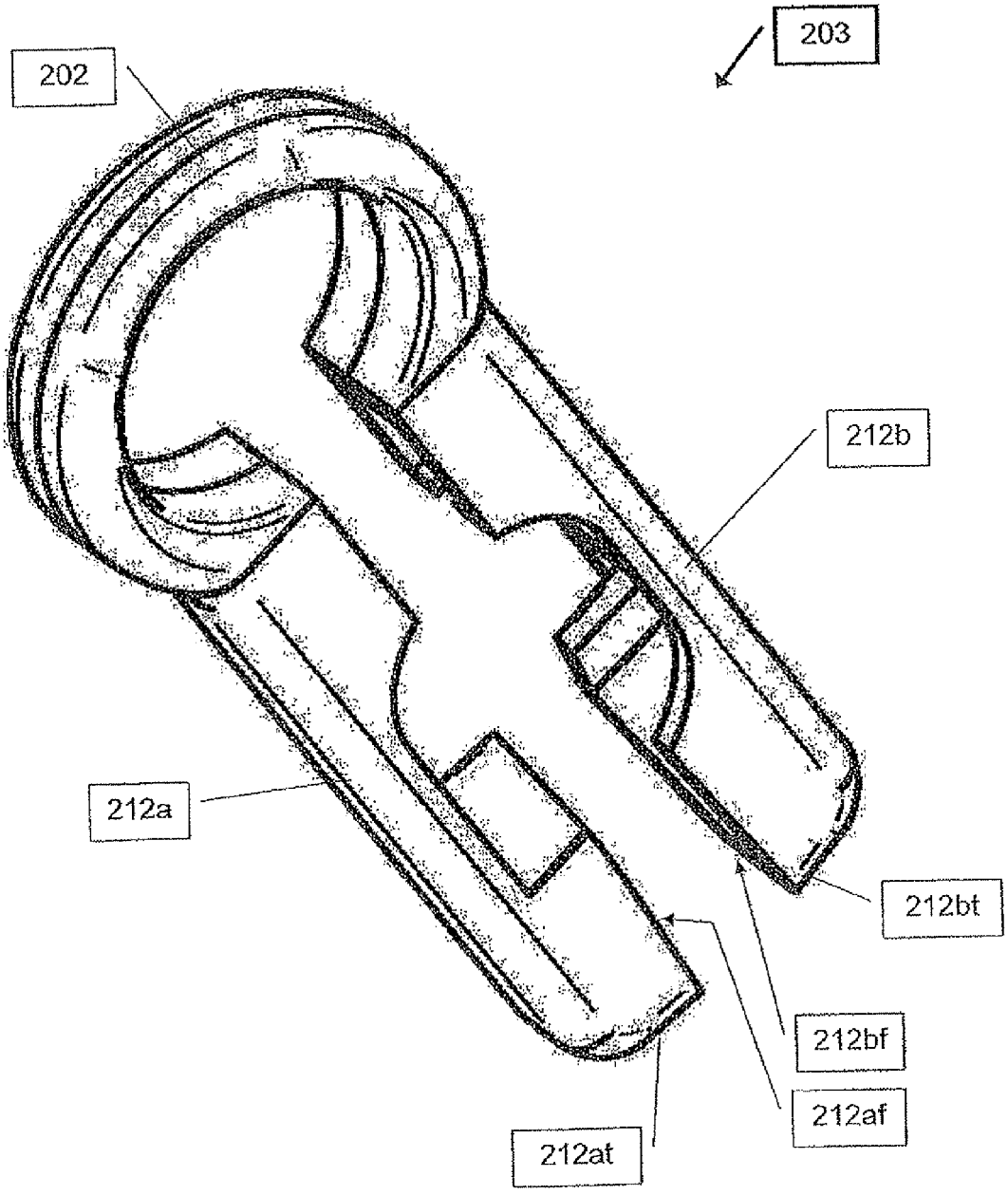


FIG. 8

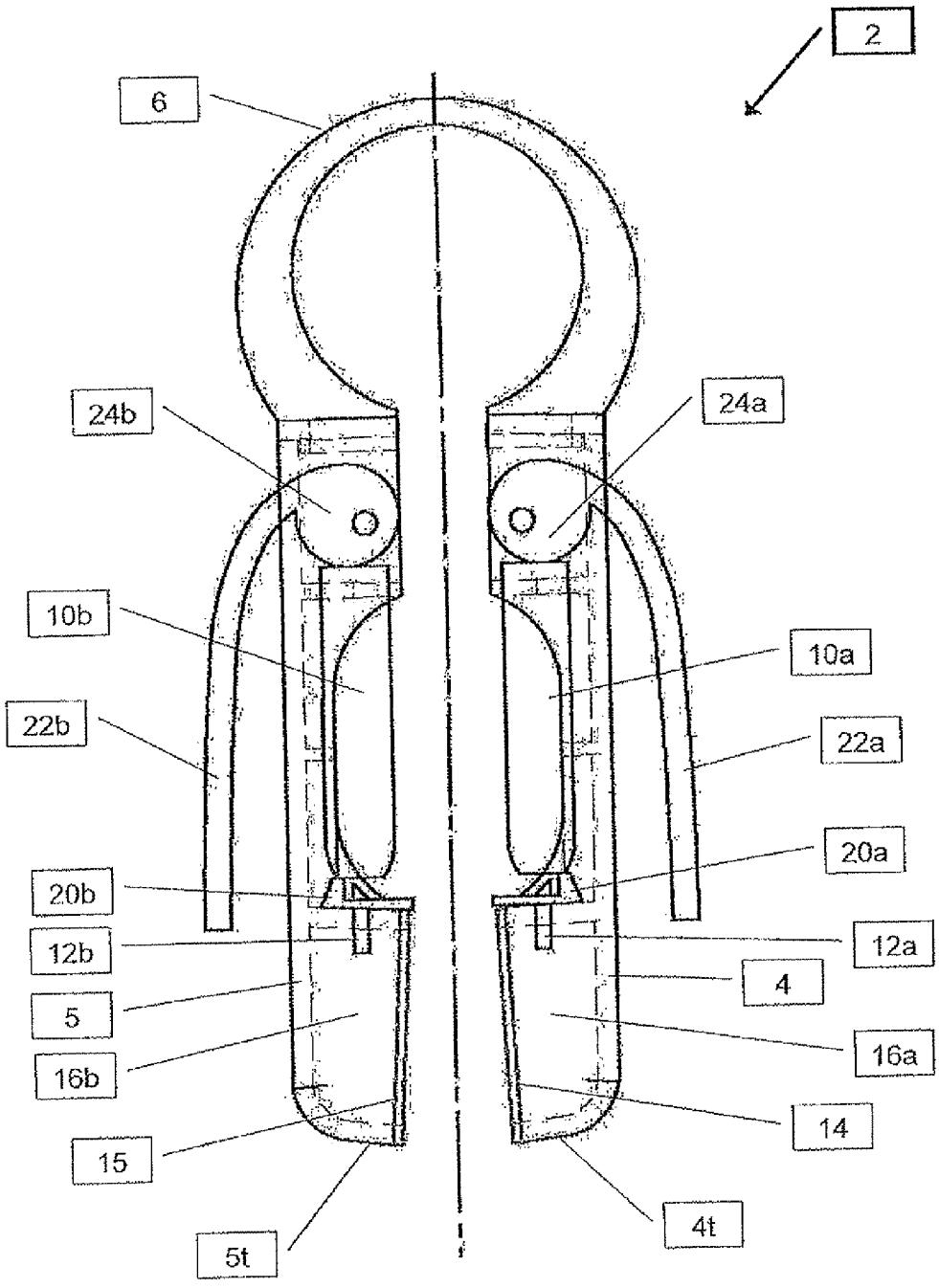


FIG. 9

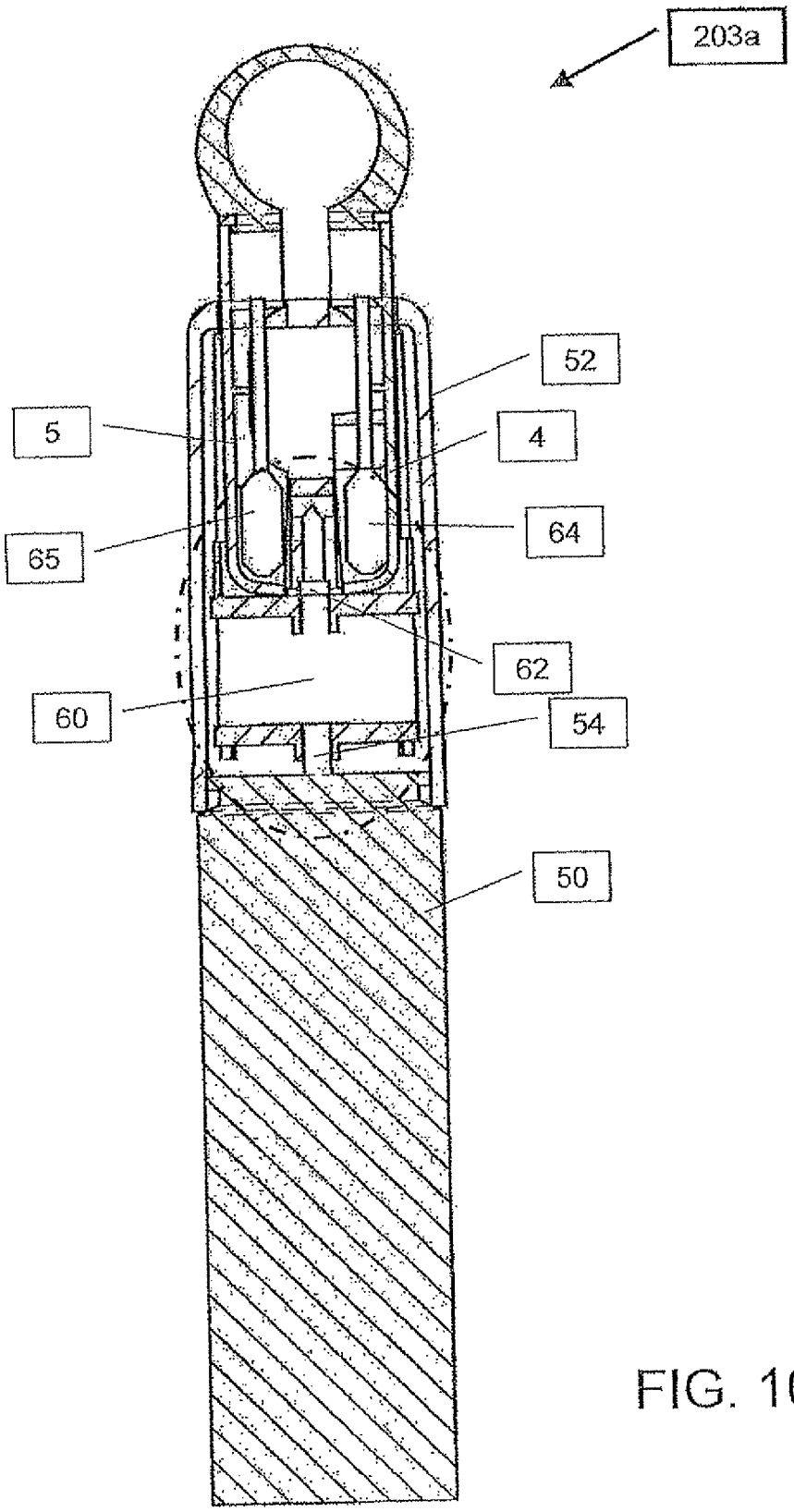


FIG. 10

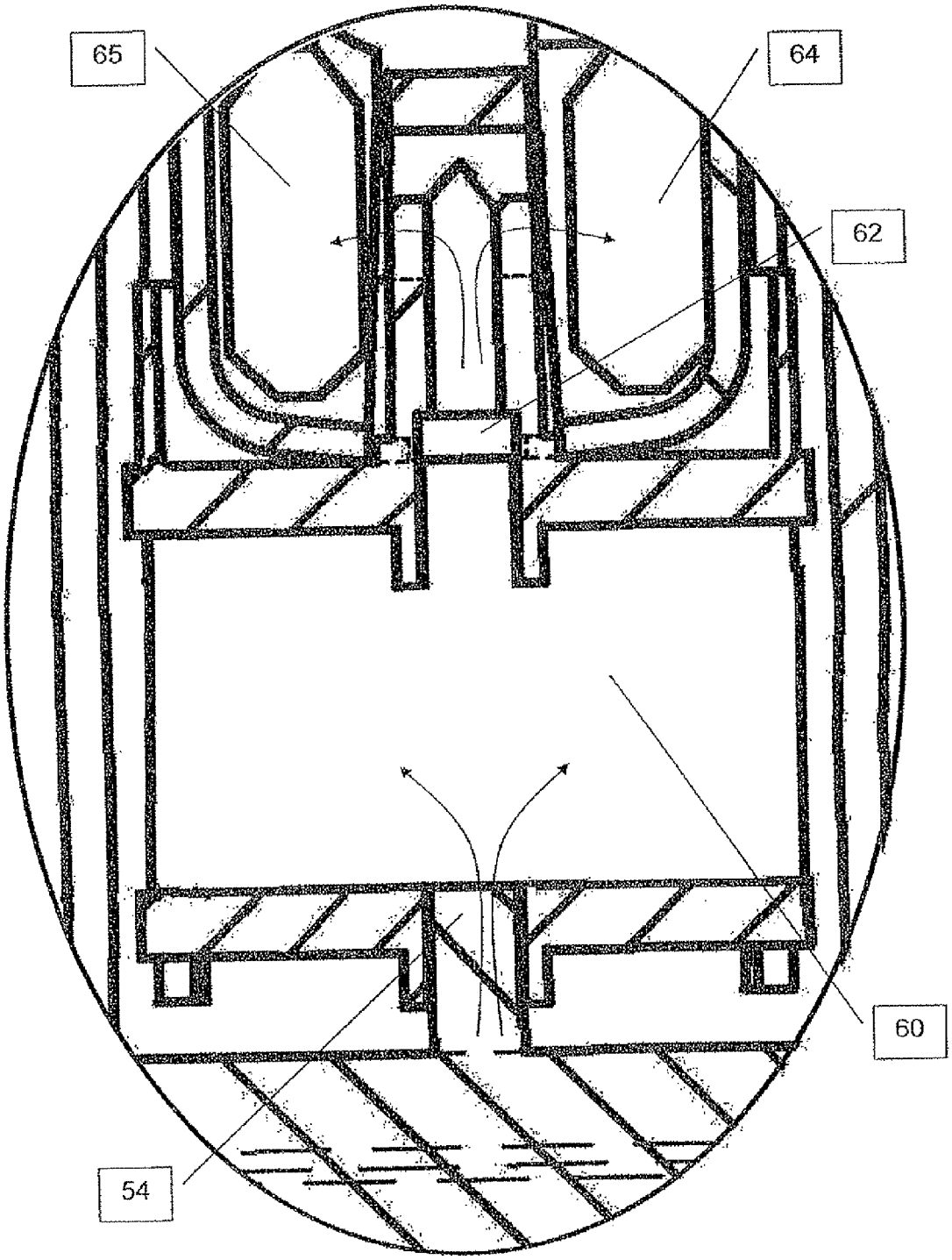


FIG. 11

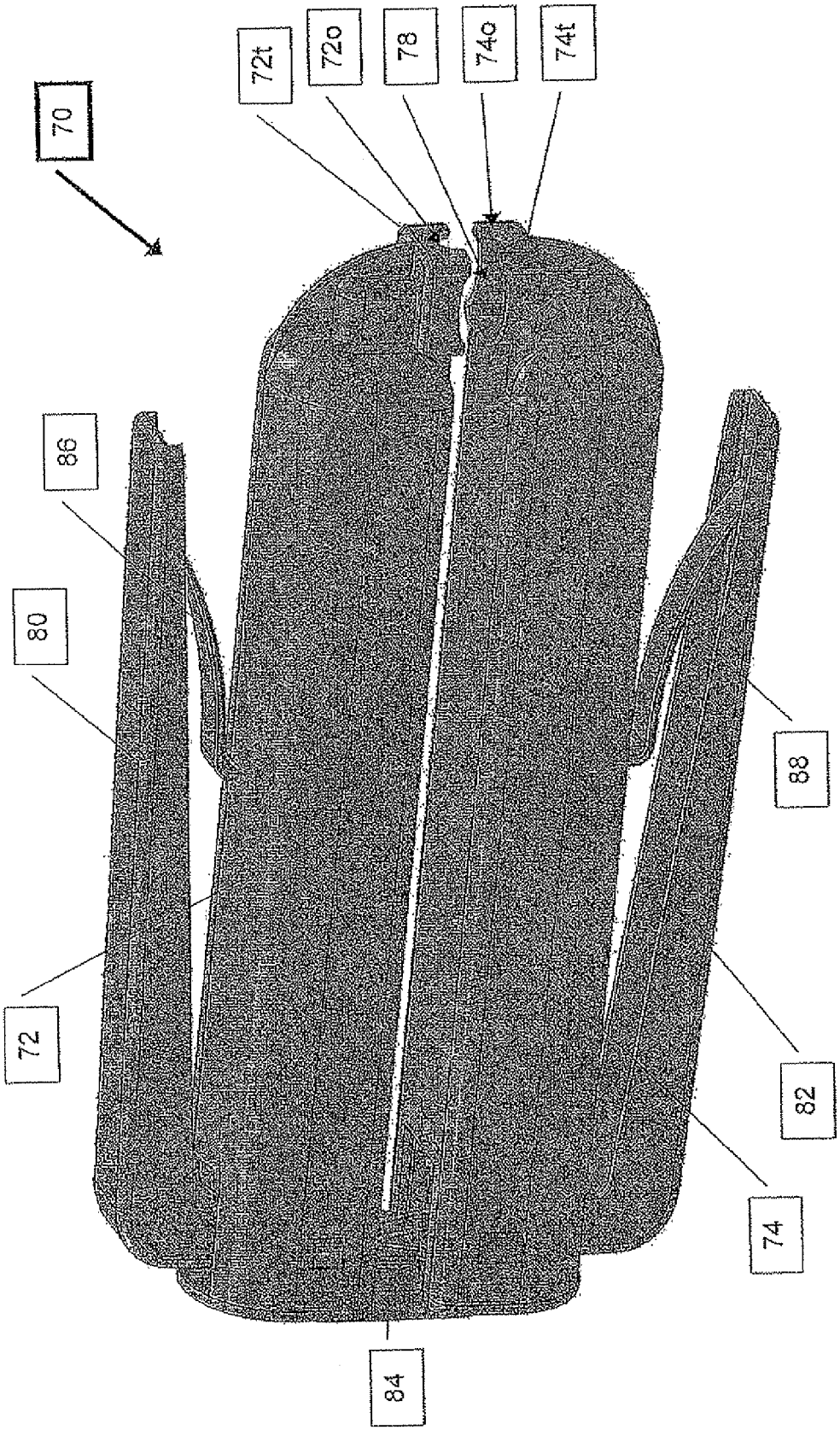


FIG. 12

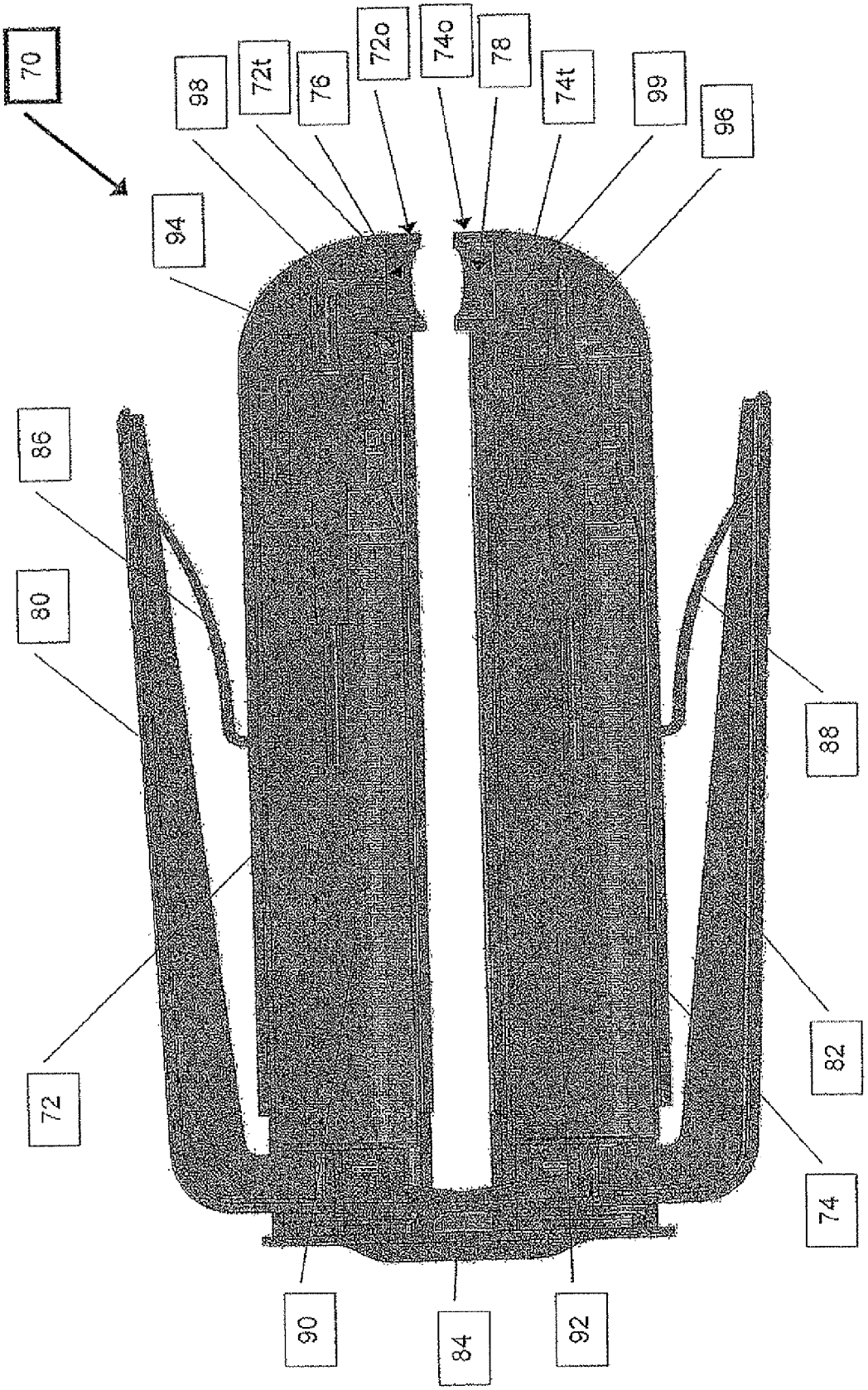


FIG. 13

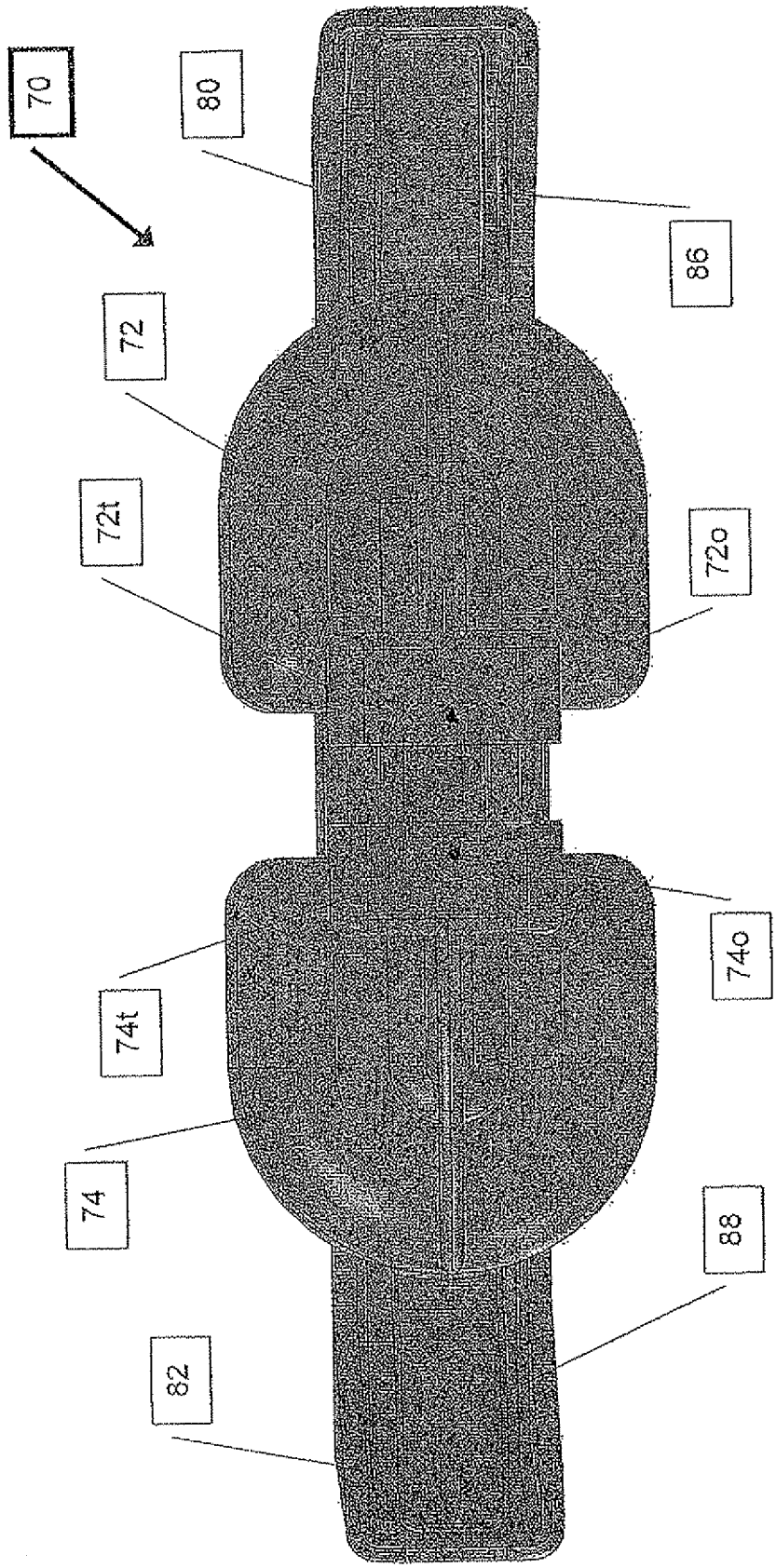


FIG. 14

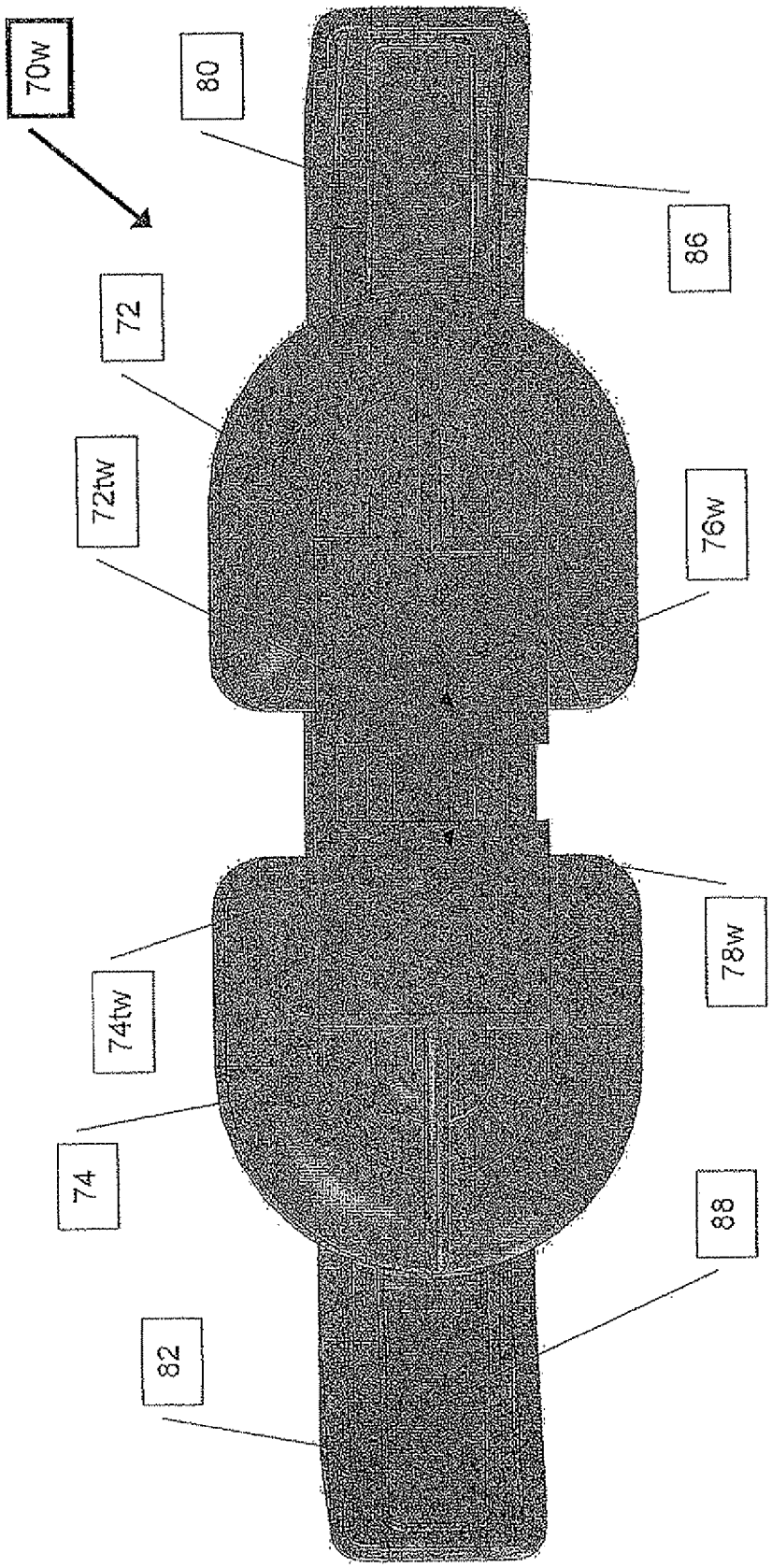


FIG. 15

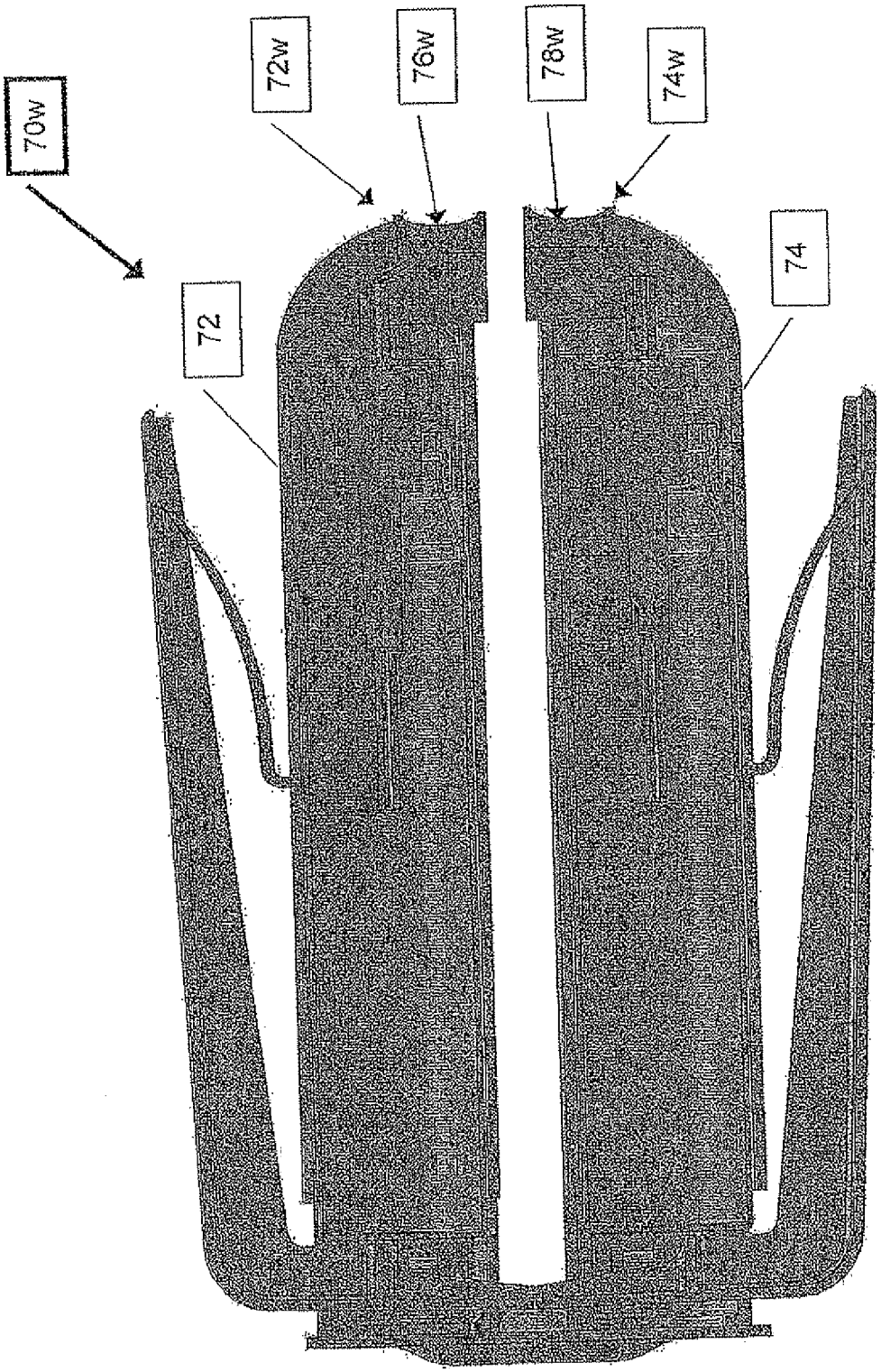


FIG. 16

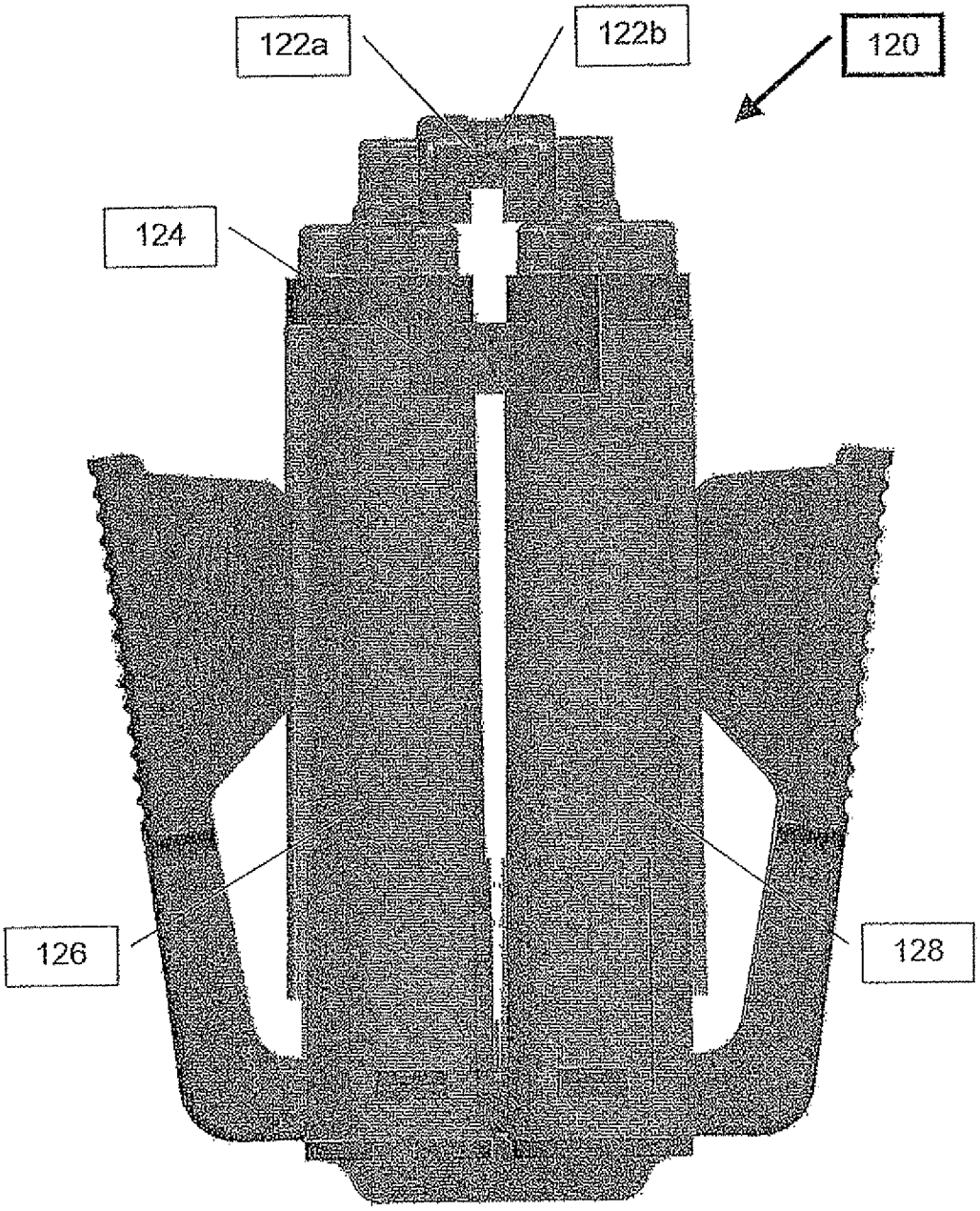


FIG. 17

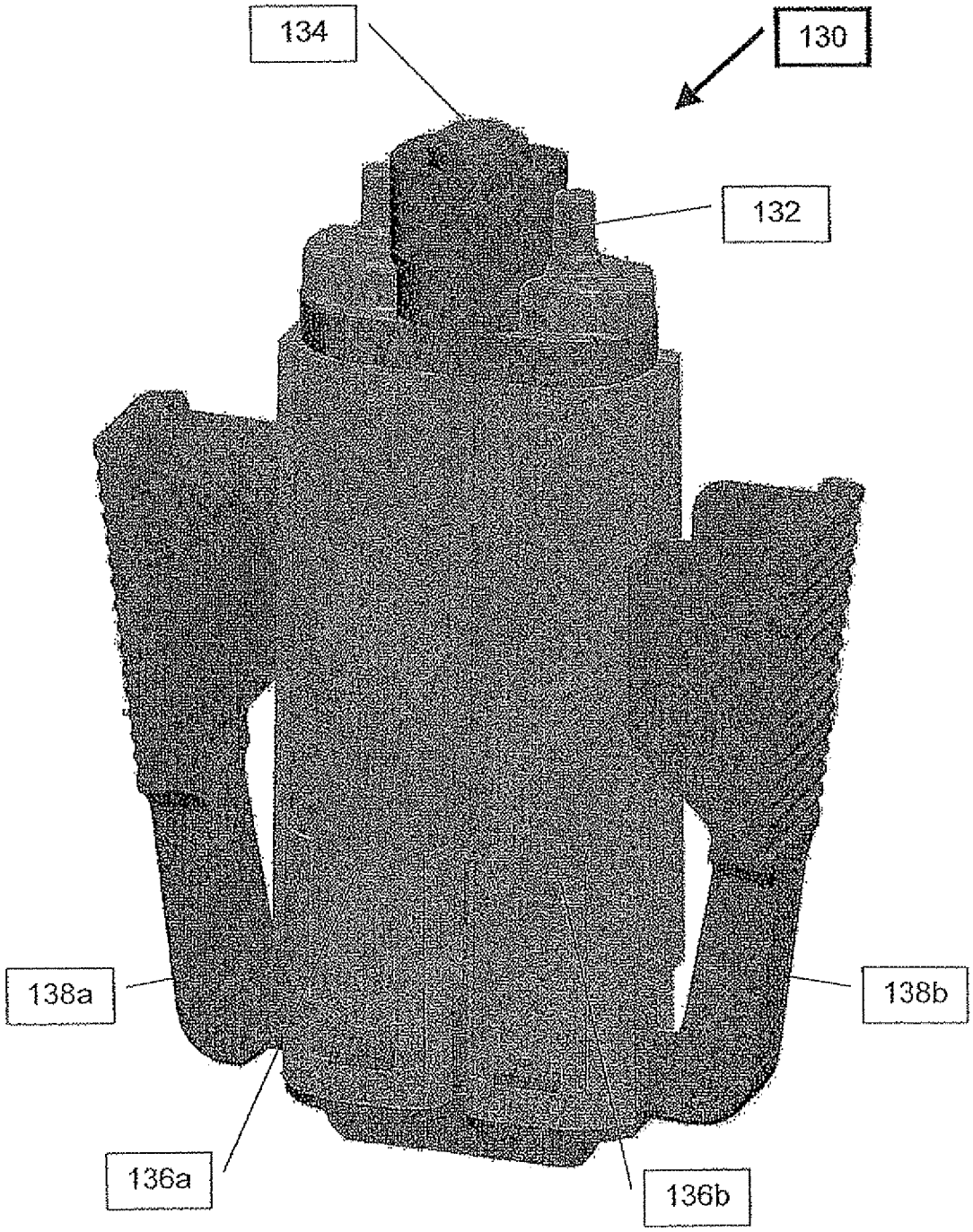


FIG. 18

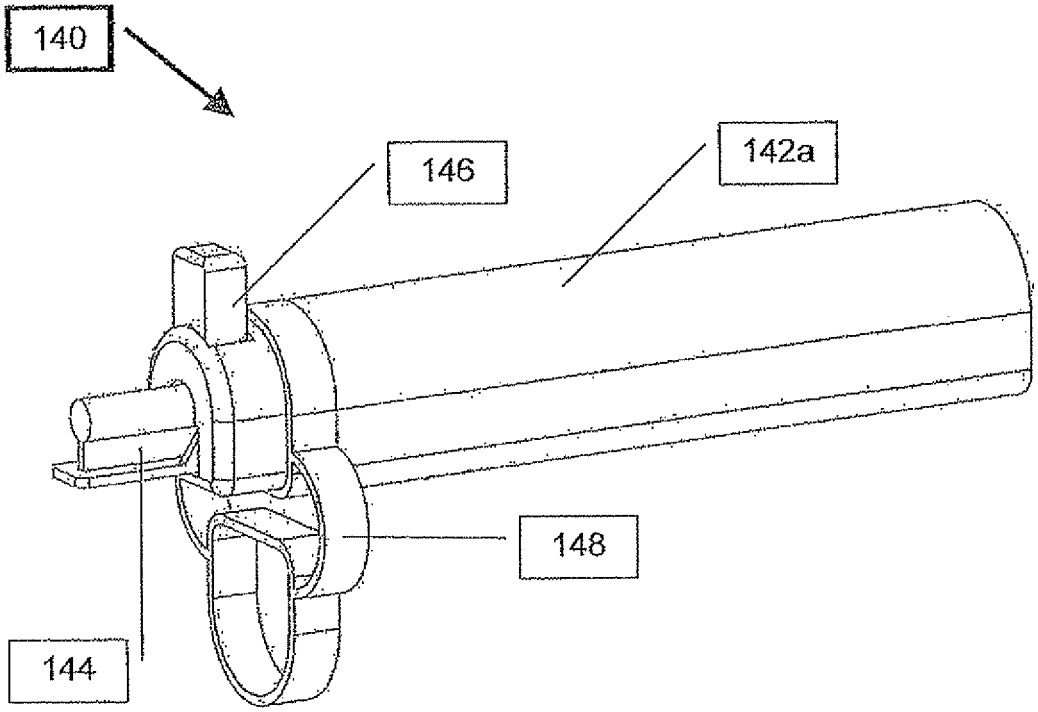


FIG. 19

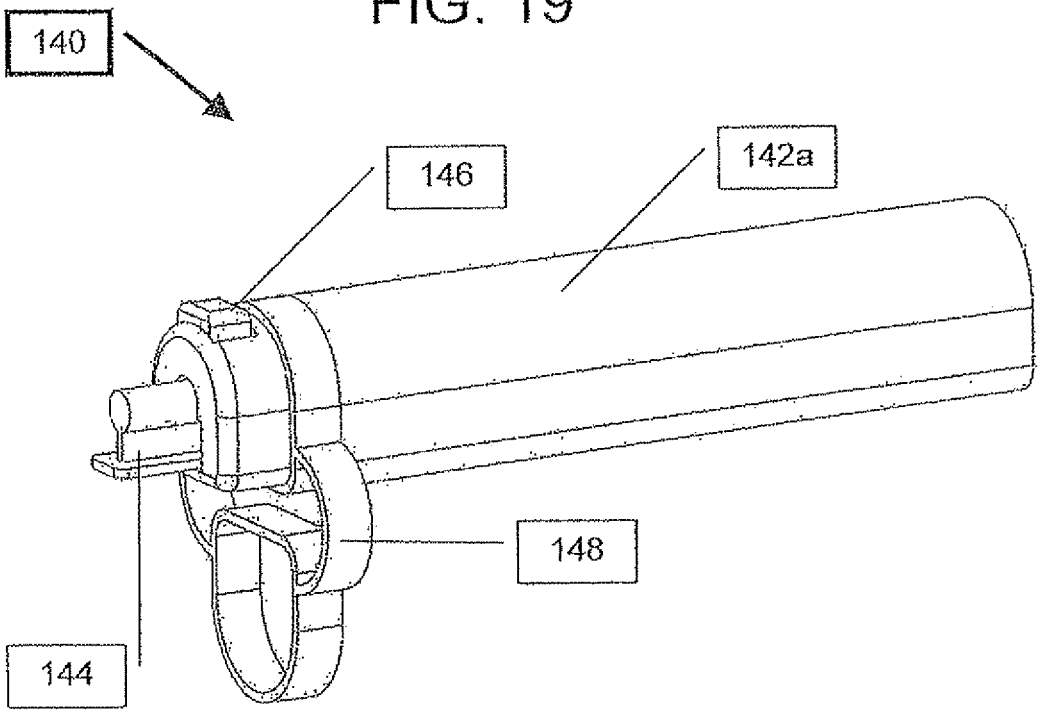


FIG. 20

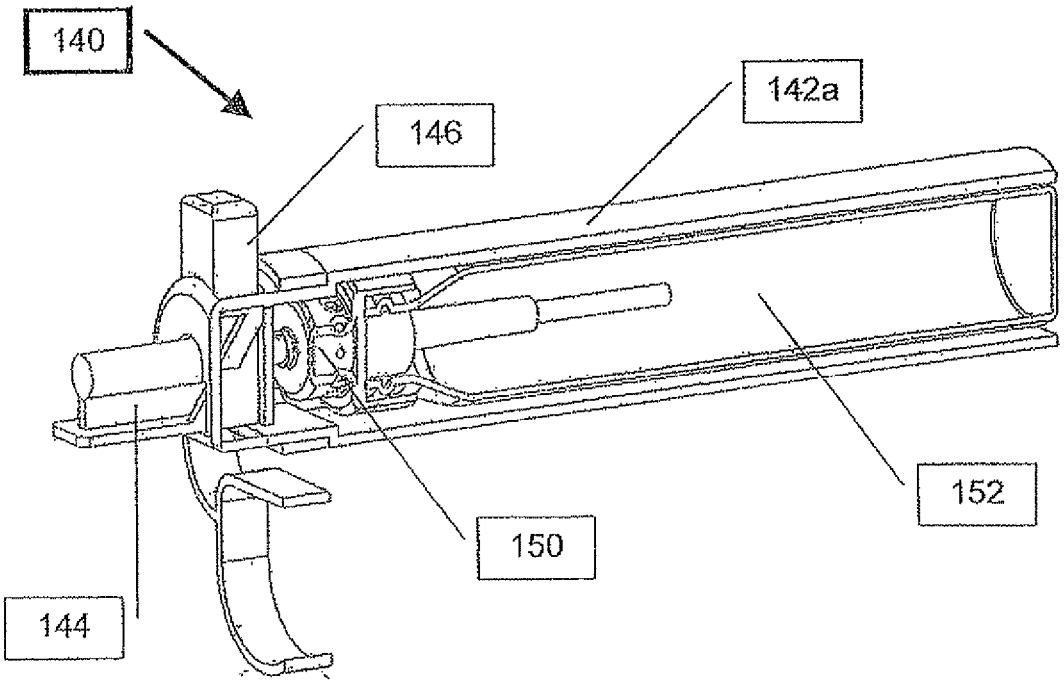


FIG. 21

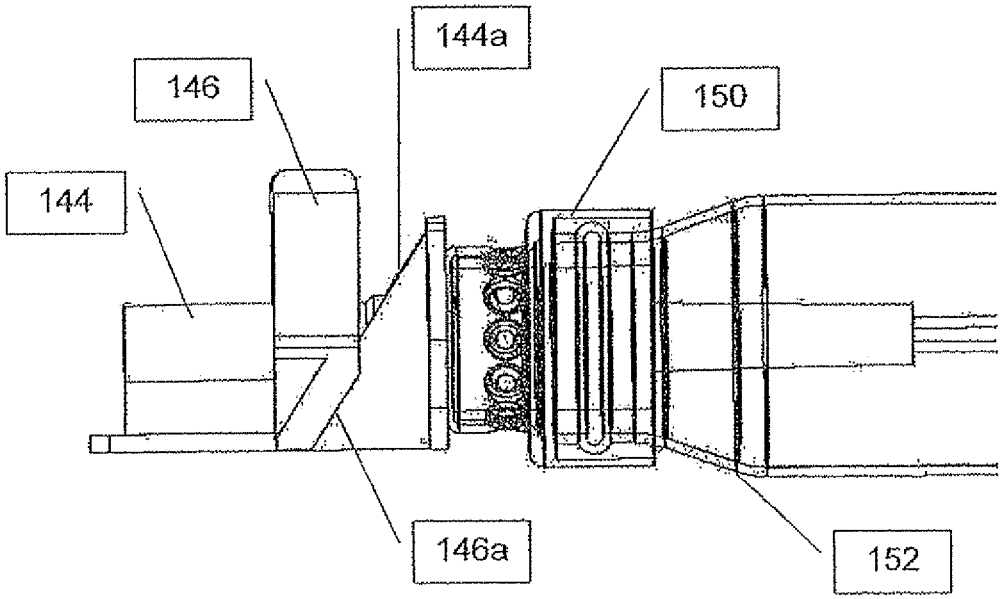


FIG. 22

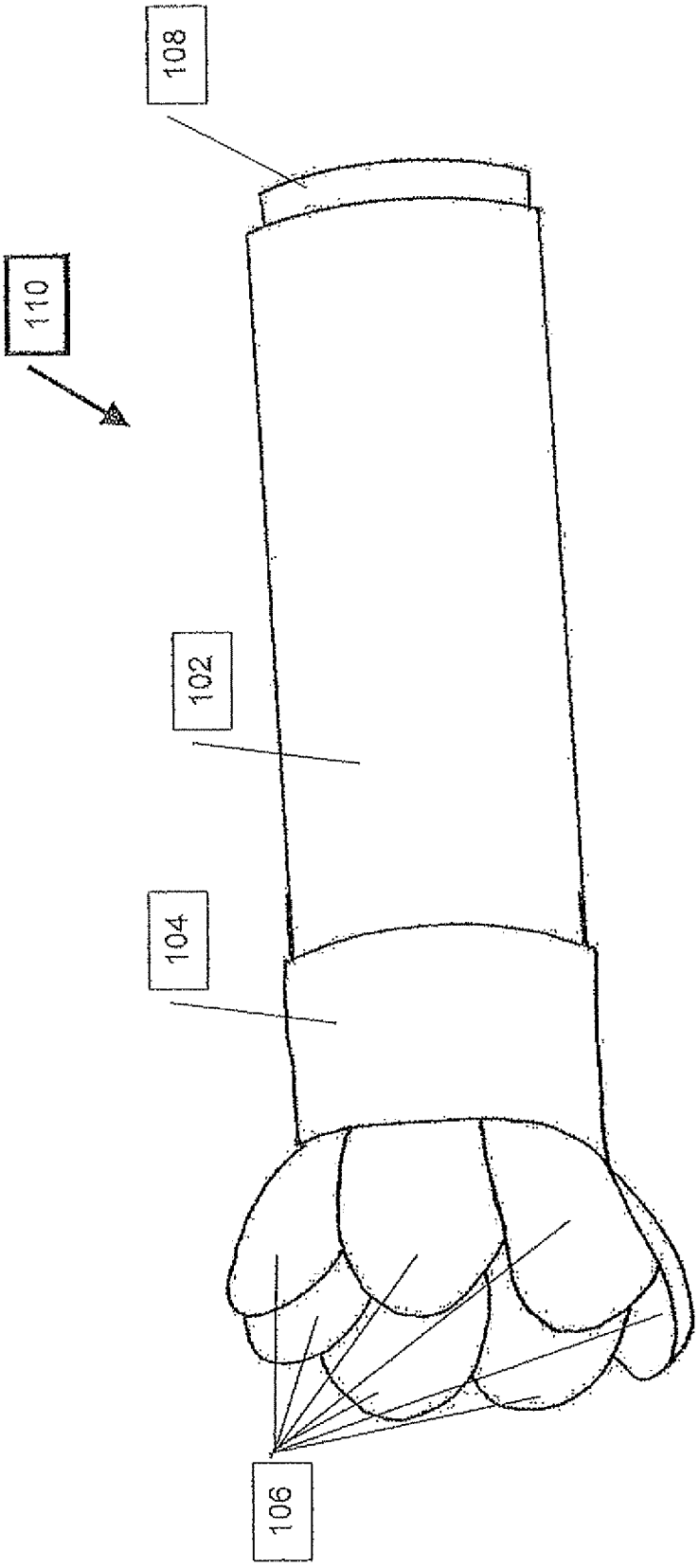


FIG. 23

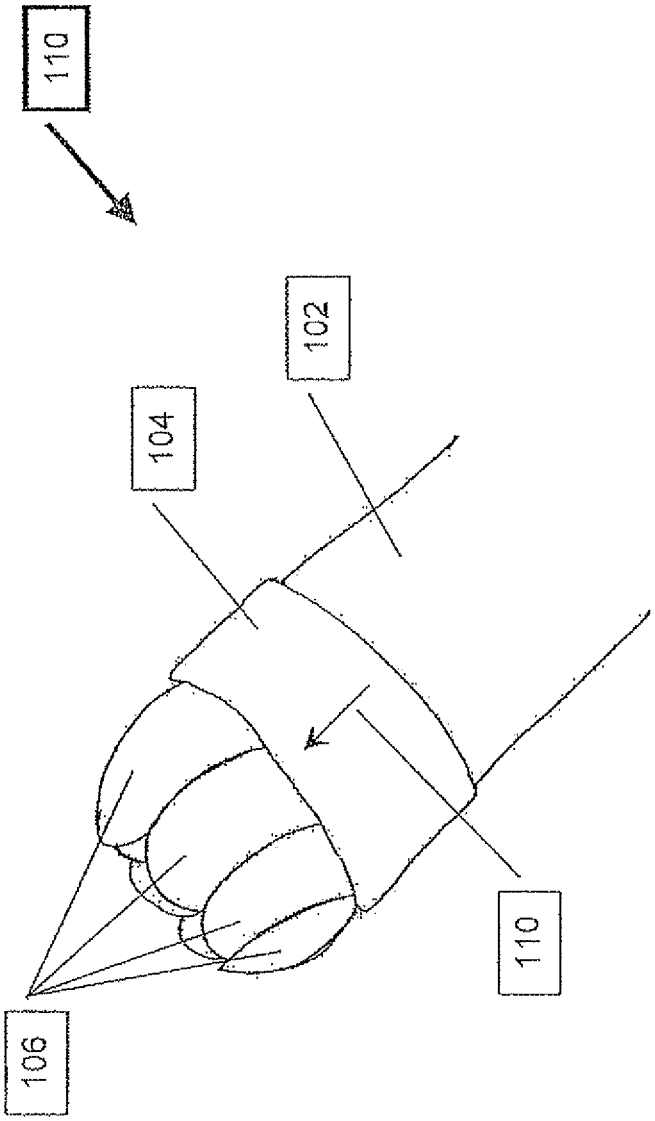


FIG. 24

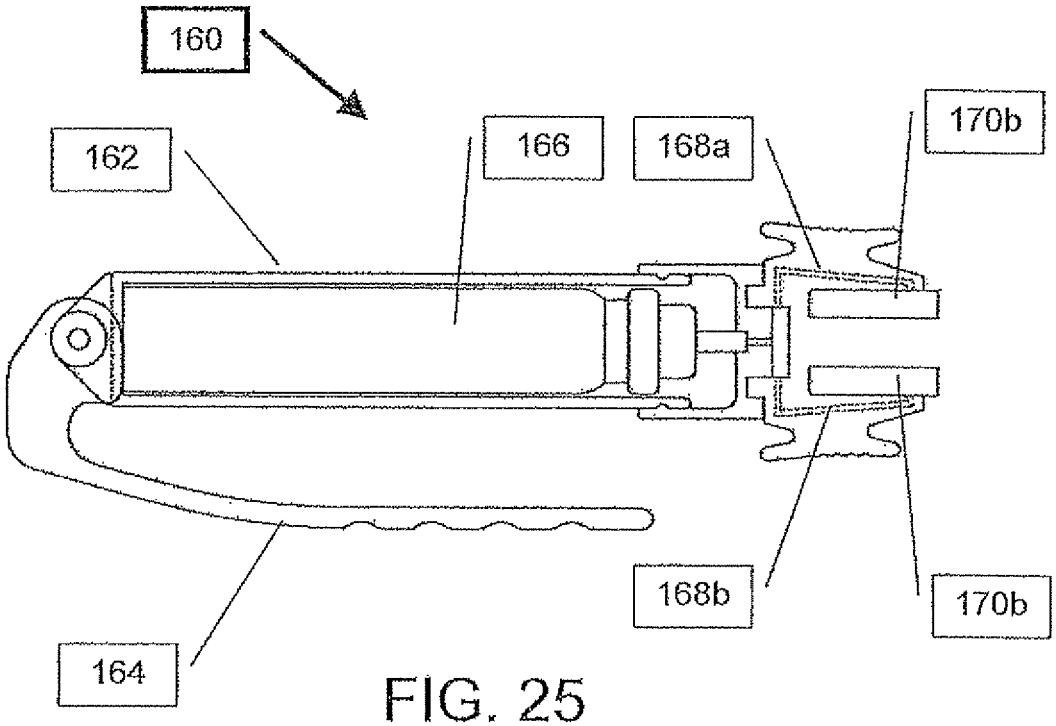


FIG. 25

METHOD AND DEVICES FOR THE TREATMENT OF SKIN LESIONS

FIELD AND BACKGROUND OF THE INVENTION

The present invention relates to methods and devices for treating skin lesions and, in particular, it concerns a tweezers type device and method for the application of cryogenic matter directly on a skin lesion while protecting the collateral skin tissue from being damaged by the cryogenic matter.

Skin lesions have typically been treated utilizing several different methods, including surgical methods requiring scalpels, electro-desiccation methods, and various cryogenic methods, including the use of liquid nitrogen. A number of problems are commonly associated with these methodologies, including excessive time requirements, excessive costs, damage to the surrounding tissue, unnecessary pain, requirement for anesthesia, medical complications, and the like.

Electro-desiccation methods typically pose a number of drawbacks such as excessive time requirements and possible hyper-trophic scarring occurring in the patient. These methods should not be used on patients who have pacemakers.

A number of problems may result from the use of scalpels for skin lesion removal, such as the occurrence of hypertrophic scarring in some patients, the occurrence of bacterial skin infections, bleeding, and excessive time requirements to perform the surgical procedure.

It is known to treat skin lesions commonly referred to as skin tags by the use of cryogenic matter. The use of liquid nitrogen to remove skin lesions poses a number of problems such as the need for expensive storage, unnecessary pain, damage to the adjacent skin, evaporation of the liquid nitrogen material during storage, and possible hypo-pigmentation and hyper-trophic scarring. Another drawback of liquid nitrogen is the high expense of the delivery systems which spray the liquid nitrogen cryogenic material onto the skin and mucous membranes.

The use of cryogenic matter falls into two basic categories. In a first category the cryogenic matter is used to drastically reduce the temperature of the treatment device, such as the device disclosed, in U.S. Pat. No. 6,375,652.

In a second category, the cryogenic matter is applied directly to the lesion itself, such as is disclosed in U.S. Pat. No. 6,296,410 and U.S. Pat. No. 5,516,505. One problem that arises within the second category is damage to collateral skin tissue caused by the cryogenic matter.

There is therefore a need for a device and method for the application of cryogenic matter directly on a skin lesion while protecting the collateral skin tissue from being damaged by the cryogenic matter.

SUMMARY OF THE INVENTION

The present invention is a device and method for the application of cryogenic matter directly on a skin lesion while protecting the collateral skin tissue from being damaged by the cryogenic matter.

According to the teachings of the present invention there is provided, a tweezers device for the application of cryogenic matter directly on a skin lesion while protecting the collateral skin tissue from being damaged by the cryogenic matter, the device comprising an applicator body configured with opposing tweezer arms, each tweezer arm including a cryogenic matter application element such that when said opposing tweezer arms are closed about the skin lesion, the skin lesion is substantially encased by said cryogenic matter application elements.

According to a further teaching of the present invention, There is also provided a canister cap configured for deployment on a canister containing cryogenic matter, the canister cap further configured to insertion of at least that portion of said opposing tweezer arms containing said cryogenic matter application elements such that cryogenic matter released from said canister is applied to said cryogenic matter application elements.

According to a further teaching of the present invention, each of said opposing tweezer arms includes a canister containing cryogenic matter such that cryogenic matter released from each said canister is applied to its corresponding said cryogenic matter application element.

According to a further teaching of the present invention, there is also provided at least one cryogenic matter release actuator configured to release cryogenic matter from said canister.

According to a further teaching of the present invention, said at least one cryogenic matter release actuator is configured as two cryogenic matter release actuators, one said cryogenic matter release actuator being associated with each of said opposing tweezer arms.

According to a further teaching of the present invention, each of said cryogenic matter release actuators is configured to interact with said canister deployed within said opposing tweezer arm with which said cryogenic matter release actuator is associated.

According to a further teaching of the present invention, each of said cryogenic matter release actuators is configured to interact with a displaceable tweezer arm tip deployed within said opposing tweezer arm with which said cryogenic matter release actuator is associated.

According to a further teaching of the present invention, each of said displaceable tweezer arm tips includes one of said cryogenic matter application elements.

There is also provided according to the teachings of the present invention, a method for the application of cryogenic matter directly on a skin lesion while protecting the collateral skin tissue from being damaged by the cryogenic matter, the method comprising: (a) providing an application device having an applicator body configured with opposing tweezer arms, each tweezer arm including a cryogenic matter application element such that when said opposing tweezer arms are closed about the skin lesion, the skin lesion is substantially encased by said cryogenic matter application elements; (b) applying cryogenic matter to each of said cryogenic matter application elements; (c) closing said opposing tweezer arms about the skin lesion, thereby substantially encasing the skin lesion with said cryogenic matter application elements; and (d) removing said application device from the skin lesion.

According to a further teaching of the present invention, said applying cryogenic matter to each of said cryogenic matter application elements is accomplished using a canister of cryogenic matter located outside of said application device.

According to a further teaching of the present invention, said applying cryogenic matter to each of said cryogenic matter application elements is accomplished by using two canisters of cryogenic matter wherein one of said canisters is deployed in each of said tweezer arms.

According to a further teaching of the present invention, said applying cryogenic matter to each of said cryogenic matter application elements is accomplished using two cryo-

genic matter release actuators, one said cryogenic matter release actuator being associated with each of said opposing tweezer arms.

According to a further teaching of the present invention, each of said cryogenic matter release actuators is implemented so as to interact with said canister deployed within said opposing tweezer arm with which said cryogenic matter release actuator is associated.

According to a further teaching of the present invention, each of said cryogenic matter release actuators is implemented so as to interact with a displaceable tweezer arm tip deployed within said opposing tweezer arm with which said cryogenic matter release actuator is associated.

According to a further teaching of the present invention, said steps (b) and (c) occur substantially simultaneously.

There is also provided according to the teachings of the present invention, a device for the application of cryogenic matter directly on a skin lesion, the device comprising: (a) an applicator body configured with a pair of arms, each arm including a canister containing cryogenic matter; (b) two cryogenic matter release actuators, one said cryogenic matter release actuator being associated with each of said arms; (c) an application tip having at least one cryogenic matter application element extending therefrom; and (d) at least one cryogenic delivery passageway configured in each said arm so as to provide fluid communication between each said canister in each said arm and said cryogenic matter application element; wherein cryogenic matter released from each said canister is delivered to said cryogenic matter application element.

According to a further teaching of the present invention, said application tip is deployed between distal ends of said arms so as to engage both said arms.

According to a further teaching of the present invention, said arms are opposing tweezer arms and said application tip is formed by the tips of said opposing tweezer arms upon closure of opposing tweezer arms.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is herein described, by way of example only, with reference to the accompanying drawings, wherein:

FIG. **1** is a front view of the invention of a first preferred embodiment of an applicator system constructed and operational according to the teachings of the present invention;

FIG. **2** is a cross sectional view of the applicator system of FIG. **1**;

FIG. **3** is a perspective view of the tweezers applicator of the applicator system of FIG. **1**;

FIG. **4** is a top perspective view of a canister cap of the applicator system of FIG. **1**;

FIG. **5** is a top perspective view of a nozzle unit of the applicator system of FIG. **1**;

FIG. **6** is a front perspective view of the tweezers inserted in the nozzle unit of the applicator system of FIG. **1**;

FIG. **7** is an enlarged detail of area B of FIG. **2**;

FIG. **8** is an enlarged detail of the tweezers applicator of the applicator system of FIG. **1**;

FIG. **9** is a cross-sectional side elevation of a second preferred embodiment of the applicator of the present invention;

FIG. **10** is a cross-sectional side elevation of a third preferred embodiment of the applicator of the present invention, shown here as part of a system;

FIG. **11** is a detail of the embodiment of FIG. **10**;

FIG. **12** is an isometric side view of a fourth preferred embodiment of a tweezer type cryogenic applicator constructed and operational according to the teachings of the present invention;

FIG. **13** is a cross sectional view of the applicator of FIG. **12**;

FIG. **14** is an end elevation of the embodiment of FIG. **12**;

FIG. **15** is an end elevation of the embodiment of FIG. **12** modified for use on warts;

FIG. **16** is a cross sectional view of the embodiment of FIG. **15**;

FIG. **17** is a side elevation of a variant embodiment of the embodiment of FIG. **12**;

FIG. **18** is a perspective view of a variant embodiment of the embodiment of FIG. **15**;

FIGS. **19** and **20** are perspective views of a portion of a further variant embodiment of the embodiment of FIG. **12**;

FIG. **21** is a perspective section view of the embodiment of FIG. **19**;

FIG. **22** is a side section detail of FIG. **21**;

FIG. **23** is an isometric view of a fifth embodiment of an applicator constructed and operational according to the teachings of the present invention, this embodiment having an adjustable opening tip shown here in an open deployment;

FIG. **24** is an isometric view of the embodiment of FIG. **23** shown in a closed deployment; and

FIG. **25** is a side sectional view of a sixth embodiment of an applicator constructed and operational according to the teachings of the present invention

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is a tweezers type device and method for the application of cryogenic matter directly on a skin lesion while protecting the collateral skin tissue from being damaged by the cryogenic matter.

The principles and operation of a tweezers type device and method for the application of cryogenic matter directly on a skin lesion according to the present invention may be better understood with reference to the drawings and the accompanying description.

By way of introduction, in its simplest form, the cryogenic applicator of the present invention is a tweezer type applicator configured such that when the tweezer arms are closed upon each other, the skin lesion, commonly referred to as a "skin tag," is substantially encapsulated and isolated from the surrounding skin tissue. Therefore, when the cryogenic matter is applied to the lesion, the surrounding collateral skin tissue is protected from contact with the cryogenic matter.

Referring now to the drawings, FIGS. **1-8** illustrate the basic tweezer type applicator of the present invention. In this first preferred embodiment of the present invention, the tweezer arms **212***a* and **212***b* are attached one to another by the spring element **202**. The tweezer arms **212***a* and **212***b* are configured such that when closed upon each other, at least the portion of the interior faces **212***af* and **212***bf* in the area close to the tip of each tweezer arm **212***a* and **212***b* respectively are substantially parallel such that the interior faces **212***af* and **212***bf* are able to close substantially tightly. With such a configuration, when the tweezer arms are closed, the target skin lesion is substantially isolated and the tips **212***at* and **212***bt* of the tweezer arms protect the collateral skin tissue during the cryogenic treatment.

The cryogenic refrigerant **214** is stored in a pressurized canister **206**. A nozzle unit **208** is attached over the end of the canister on top of the release valve. A canister cap **205** is inserted over a beaded edge of the canister. The canister cap **205** contains two tweezer opening guides **210** through which tweezers **203** may be inserted.

The tweezers **203**, comprised of two substantially parallel tweezers arms **212***a* and **212***b*, are connected by a spring **202**. Absorbent buds **201** with handles **217** are inserted within the tweezers proximate to each tweezer arm tips **212***at* and **212***bt*.

The refrigerant flows through the release valve and then through a nozzle outlet **208** laterally. Refrigerant is absorbed by the absorbent buds **201** inserted within the tweezers **203**. Excess cryogenic gas or liquid that accumulates will be drained through the refrigerant drain **211**. The tweezers containing the absorbent buds with refrigerant can then be applied to the skin lesion to freeze it resulting in its destruction.

An embodiment of the tool for treatment of skin lesions utilizing cryogenic agents is shown in FIGS. **1-8**. The method for treatment of skin lesions removes skin lesions by substantially reducing the temperature of the lesion tissue on the subject's body, resulting in the destruction of the lesion tissue within a few days. A tweezers **203** included on the method for treatment of skin lesions acts as a buffer between the patient's healthy skin and the cryogenic agents contained in the invention.

The refrigerant **214** is comprised of a cryogenic agent such as dimethyl ether (DME) and propane, or other cryogenic material. It is stored in a pressurized canister **206**. In one embodiment of the invention, the pressurized canister **206** may be comprised of a cylindrically shaped metallic container. A canister cap **205** is attached over the end of the canister **206** and serves to hold the tweezers **203** in place, and also prevents the spraying of cryogenic matter. A nozzle unit **207** is attached at one end of the canister **206** proximate to the release valve **218**. The canister cap **205** contains two tweezer opening guides **210** comprised of apertures through which the tweezer **203** may be inserted.

The tweezers **203** are comprised of two substantially parallel tweezer arms **212***a* and **212***b* connected by a spring **202** which holds the tweezer arms **212***a* and **212***b* in an open position. An absorbent bud **201**, including a handle **217** affixed to the absorbent bud, is attached proximate to each tweezer tip **212***at* and **212***bt*. An access point **221** on the tweezers allows the user to insert and remove the absorbent buds **201** using the handle **217**. Each tweezer arm **212***a* and **212***b* contains an absorbent bud insertion guide **204** which facilitates insertion of the absorbent bud **201** into the tweezer **203**. A baffle **213** in the tweezers prevents refrigerant **214** from flowing out of the canister cap **205**. The tweezers also contains a rib **215** to support the absorbent bud handle **217**. The tweezer tips **212***at* and **212***bt* depress the nozzle unit **207** and also act as a barrier between the skin and the refrigerant **214**.

The refrigerant **214** initially flows through the release valve **218** and then through the nozzle outlets **208**. After leaving the nozzle outlets **208**, refrigerant **214** flows through a plurality of nozzle outlets **208**, thereby causing refrigerant **214** to flow directly onto the absorbent buds **201**. A plurality of refrigerant drains **211** in the nozzle unit **207** drain excess refrigerant **214**.

To remove a skin lesion using the method for treatment of skin lesions of the present invention, a user inserts the tweezers **203** with their buds **201** into the tweezer opening guides **210** thereby stabilizing the tweezers **203** in the tweezer guides **216**. The user then presses down on the tweezers **203**, thereby depressing the nozzle unit **207**. The pressurized refrigerant **214** then flows through the release valve **218** and through the nozzle outlets **208**. The absorbent buds **201** are thereby saturated with refrigerant **214**. The refrigerant drains **211** release excess refrigerant **214**. The user removes the tweezers **203** from the canister cap **205**, and then squeezes the skin lesion, thus completely encapsulating the skin lesion between the tweezer buds **201** containing refrigerant **214**. The temperature of the lesion tissue is substantially reduced as a result of applying the tweezer buds **201**, causing tissue destruction so that the lesion tissue will normally fall off within several days. In some embodiments of the invention, the absorbent buds **201** are normally replaced after each use of the method for treatment of skin lesions of the present invention.

As will be understood from the following description of variant embodiments of the present invention, this basic tweezer configuration as illustrated in FIGS. **1-8** may be adapted for use with any number of cryogenic application embodiments.

The second preferred embodiment 2 of the present invention illustrated in FIG. **9** is configured such that the cryogenic matter is stored in two pressurized canisters **10***a* and **10***b* that are deployed in tweezer arms **4** and **5** respectively. It is intended that the pressurized canisters **10***a* and **10***b* will be punctured by hollow needles **12***a* and **12***b*. Canister retaining elements **20***a* and **20***b* are deployed in each of the tweezer arms in order to prevent premature penetration of the canisters by the needles. As illustrated here, at least a portion of each of the canister retaining elements **20***a* and **20***b* extends beyond the interior faces **14** and **15** of tweezer arms **4** and **5**.

In operation, when the tweezer arms are close around a target lesion, the canister retaining elements **20***a* and **20***b* are displaced allowing the canisters **10***a* and **10***b* to be forced against the points of the hollow needles **12***a* and **12***b*. This is accomplished by pressing levers **22***a* and **22***b* toward the tweezer arms, thereby rotating cams **24***a* and **24***b*. The cryogenic matter stored in each of the canisters is directed through the hollow needles into chambers **16***a* and **16***b* located in the tips of each of the tweezer arms.

In this embodiment of the present invention, at least a portion of the interior faces **14** and **15** of tweezer arms **4** and **5** are configured with a permeable material such as, but not limited to, foam that allows the cryogenic matter released into chambers **16***a* and **16***b* to reach the target lesion.

The third preferred embodiment of the present invention illustrated herein in FIGS. **10** and **11**, is closely related to the embodiment described with regard to FIGS. **1-8** in that the tweezer arms **4** and **5** of the tweezer applicator **203***a* are configured with absorbent applicator buds **64** and **65**. In order to apply Cryogenic matter to the applicator buds, the tweezer arms are inserted in the canister cap **52** that is deployed on pressurized canister **50** that contains the cryogenic matter. Once the tweezer arms are inserted into the canister cap, one-way valve **54** is operated thereby allowing cryogenic matter to enter the dosing chamber **60** which is designed to hold a predetermined dose of the cryogenic matter. When the dosing chamber is filled, one-way valve **62** is operated so as to direct the cryogenic matter onto the applicator buds, thereby saturating them with the cryogenic matter.

The applicator **203***a* is then removed from the canister cap **52** and the tweezer arms are closed around the target skin lesion.

The fourth preferred embodiment **70**, as shown in FIGS. **12-14**, illustrates a design using levers **80** and **82** built into the end cap **84**, which also serves to connect the two tweezer arms **72** and **74**. In order to ensure the tweezers are closed before the valves of the canisters, which are deployed in each of the two tweezer arms **72** and **74** and contain the cryogenic material, open, leaf spring like elements **86** and **88** extend from the tweezer arms **72** and **74**. Leaf spring elements **86** and **88** may be integrally form with each side piece at the time of production or attached during assembly. As the levers **80** and **82** are squeezed, the leaf spring elements **86** and **88** are engaged so

as to close the tweezer arms **72** and **74** such that the tips **72***t* and **74***t* close around the lesion. As more pressure is applied to the levers **80** and **82**, the canisters **90** and **92** of cryogenic matter is forced forward as each of the levers **80** and **82** pivots about its hinged connection to the base **84**. This action causes the valves **94** and **96** of each of the canisters **90** and **92** to open, thereby releasing at least a portion of the cryogenic material. Preferably, but not necessarily, the canisters **90** and **92** are configured with valves **94** and **96** that deliver a metered dose, thereby assuring that only a predetermined amount of cryogenic matter is released while also allowing for multiple use of the applicator. It should be noted that the use of a metered dose is intended only as a non-limiting example and that a non-metered continuous delivery of cryogenic matter is within the scope of the present invention.

The cryogenic matter that is released moves through passages **98** and **99** and enters regions **76** and **78** that open one to another such that the absorbent material deployed in each region **76** and **78** contact each other when the tweezer arms **72** and **74** are in a closed deployment. While it is preferable, it is not necessarily that at least one of regions **76** and **78** has deployed within it absorbent material that is substantially saturated with the cryogenic matter.

When treating lesions such as, but not limited to, skin tags, the lesion is encapsulated by the absorbent material when the cryogenic matter saturates the absorbent material. However, if the treatment target is a wart, the variant embodiment **70***w* of the tweezers of the present invention as illustrated in FIGS. **15** and **16** should be used.

As illustrated here, the regions **76***w* and **78***w* are open both to each other and on their outer sides as well, such that the absorbent material deployed in each of the region **76***w* and **78***w* is exposed at the tips **72***tw* and **74***tw*.

With such a configuration, when the tweezer arms **72** and **74** are closed and the absorbent material is saturated, the tweezer tips **72***tw* and **74***tw*, which now form an application tip, are kept closed and contact between the absorbent material and the wart is made.

FIG. **17** illustrates a variant **120** of the embodiment of tweezer applicator of FIGS. **12-14**. FIG. **17** shows the cryogenic matter application elements **122***a* and **122***b*. As illustrated is the additional alignment element **124** which provides alignment for the tweezer arms **126** and **128**.

FIG. **18** illustrates a variant **130** of the embodiment of tweezer applicator of FIGS. **15-16**. FIG. **18** shows a device for the application of cryogenic matter directly on a skin lesion having a single cryogenic matter application element **134** extending from the end of the wart applicator tip **132** deployed between distal ends of the arms so as to engage both of the arms. More specifically, the applicator of FIG. **18** has an applicator body configured with a pair of arms **136***a* and **136***b*, each arm including a canister containing cryogenic matter (not shown). There are two cryogenic matter release actuators **138***a* and **138***b*, one the cryogenic matter release actuator being associated with each of the arms. There is at least one cryogenic delivery passageway configured in each the arm so as to provide fluid communication between each the canister in each the arm and the cryogenic matter application element such that cryogenic matter released from each of the canister is delivered to the cryogenic matter application element.

By way of a practical means for producing this embodiment of the present invention, the wart applicator tip **132** is constructed so as to be deployable on the distal ends of the tweezer arms of the embodiment of FIG. **17**.

It will be understood that the embodiments described above with regard to FIGS. **9-18** include cryogenic matter release actuators configured to interact with the canister deployed within the opposing tweezer arm with which the cryogenic matter release actuator is associated.

FIGS. **19-22** illustrate a further variant **140** of the tweezer applicator of the present invention in which the cryogenic matter release actuators are configured to interact with the displaceable tweezer arm tip deployed within said opposing tweezer arm with which said cryogenic matter release actuator is associated.

Illustrated here is only one **142***a* of the two opposing tweezer arms supported by spring element **148**. In this embodiment, inward displacement of the trigger button **146** causes the inward displacement of the displaceable tweezer arm tip **144**, as seen in the comparison of FIGS. **19** and **20**. The inward displacement of displaceable tweezer arm tip **144** activates the dispenser nozzle **150** deployed on the canister **152** of cryogenic matter.

While there are numerous configurations of the association of the trigger button **146** and the displaceable tweezer arm tip **144**, the embodiment illustrated here is configured such that the interaction between the sloped surface **146***a* of trigger button **146** and the corresponding sloped surface **144***a* of displaceable tweezer arm tip **144** causes inward displacement of the displaceable tweezer arm tip **144** when the trigger button **146** is pressed inwardly. Once the cryogenic matter application elements (not shown) associated with the tweezer arms have been saturated with sufficient cryogenic matter, the trigger buttons are released thereby allowing the displaceable tweezer arm tips to return to their original deployment in preparation for application on the skin lesion.

The fifth embodiment **110** of an applicator of the present invention is illustrated in FIGS. **23-24**. This pen-style embodiment, which is preferably for use with skin tags, has a substantially hollow applicator barrel **102** to which is connected an array of adjustable fingerlike extensions **106** shown in FIG. **23** in an open deployment and in FIG. **24** in a closed deployment. Adjustment of the fingers **106** is accomplished by sliding adjustment collar **104** lengthwise along the barrel **102**.

Similar to the embodiments described above, here too, a canister of cryogenic matter is deployed in the barrel **102**. The canister valve is activated by simply pushing the activation button **108**.

In operation, the applicator **110**, with the fingers **106** in an open deployment, is positioned such that the fingers substantially surround the target skin tag. Adjustment collar **104** is then slid toward the fingers **106** as illustrated by arrow **110** in FIG. **24**, thereby closing the fingers **106** around the skin tag so as to protect the surrounding skin tissue from collateral damage when the cryogenic matter is applied to the skin tag.

This embodiment may include absorbent material deployed in the barrel **102** near the fingers **106** so as to come into contact with the skin tag. Alternatively, the cryogenic matter may be applied directly to the skin tag since the fingers **106** protect the surrounding skin tissue from collateral damage.

FIG. **25** illustrates a sixth preferred embodiment **160** of the present invention for use with skin tags is a second pen-style applicator. This embodiment includes a single cylindrical body **162** to which is attached a single actuator handle **164**. Cryogenic matter leaving the canister **166** travels through passageways **168***a* and **168***b* to the cryogenic matter application elements **170***a* and **170***b*. Pressure applied to closure grips **172***a* and **172***b* cause cryogenic matter application elements **170***a* and **170***b* to close on and substantially encase the skin tag.

It will be appreciated the embodiments illustrated herein may be shown with a vertical valve, the tweezer applicator devices of the present invention may also be adapted to be used with substantially any suitable valve configuration such as, but not limited to, toggle valves or tilt valves.

It will be appreciated that in some embodiments of the present invention the cryogenic matter is applied to the application elements before the application elements contact the target skin lesion. In other embodiments, the cryogenic matter is applied to the application elements after the application elements contact the target skin lesion. In still other embodiments, the application of the cryogenic matter to the application elements and the contact of the application elements with the target skin lesion occur substantially simultaneously.

It will be appreciated that the above descriptions are intended only to serve as examples and that many other embodiments are possible within the spirit and the scope of the present invention.

What is claimed is:

1. A tweezers device for the application of cryogenic matter directly on a skin lesion while protecting the collateral skin tissue from being damaged by the cryogenic matter, the device comprising an applicator body configured with first and second opposing tweezer arms, each tweezer arm including an absorbent application element for absorbing cryogenic matter such that when said opposing tweezer arms are closed said absorbent application elements close upon the skin lesion, and said absorbent application elements are configured to absorb and contain the cryogenic matter and apply the cryogenic matter directly on the skin lesion wherein each of said first and second tweezer arms is configured with a hollow interior region, and wherein first and second canisters containing cryogenic matter are deployed within said hollow interior region of said first and second tweezer arms, respectively, and cryogenic matter released from each said canister is applied to its corresponding said absorbent application element.

2. The tweezers device of claim **1**, further including at least one cryogenic matter release actuator configured to release cryogenic matter from said canister.

3. The tweezers device of claim **2**, wherein said at least one cryogenic matter release actuator is configured as two cryogenic matter release actuators, one said cryogenic matter release actuator being associated with each of said opposing tweezer arms.

4. The tweezers device of claim **3**, wherein each of said cryogenic matter release actuators is configured to interact with said canister deployed within said opposing tweezer arm with which said cryogenic matter release actuator is associated.

5. The tweezers device of claim **3**, wherein each of said cryogenic matter release actuators is configured to interact with a displaceable tweezer arm tip deployed within said opposing tweezer arm with which said cryogenic matter release actuator is associated.

6. A method for the application of cryogenic matter directly on a skin lesion while protecting the collateral skin tissue from being damaged by the cryogenic matter, the method comprising:

(a) providing an application device having an applicator body configured with first and second opposing tweezer arms, each tweezer arm including an absorbent application element for absorbing and containing cryogenic matter such that when said opposing tweezer arms are closed said absorbent application elements close upon the skin lesion, wherein each of said first and second tweezer arms is configured with a hollow interior region, and wherein first and second canisters containing cryogenic matter are deployed within said hollow interior region of said first and second tweezer arms, respectively, such that cryogenic matter released from each said canister is applied to its corresponding said absorbent application element;

(b) applying cryogenic matter to each of said absorbent application elements such that each of said absorbent application elements absorbs and contains cryogenic matter;

(c) closing said opposing tweezer arms about the skin lesion, thereby closing said absorbent application elements upon the skin lesion so as to apply cryogenic matter directly on the skin lesion; and

(d) removing said application, device from the skin lesion.

7. The method of claim **6**, wherein said applying cryogenic matter to each of said absorbent application elements is accomplished using two cryogenic matter release actuators, one said cryogenic matter release actuator being associated with each of said opposing tweezer arms.

8. The method of claim **7**, wherein each of said cryogenic matter release actuators is implemented so as to interact with said canister deployed within said opposing tweezer arm with which said cryogenic matter release actuator is associated.

9. The method of claim **7**, wherein each of said cryogenic matter release actuators is implemented so as to interact with a displaceable tweezer arm lip deployed within said opposing tweezer arm with which said cryogenic matter release actuator is associated.

10. The method of claim **6**, wherein said steps (b) and (c) occur substantially simultaneously.

11. A device for the application of cryogenic matter directly on a skin lesion, the device comprising

(a) an applicator body having first and second tweezer arms, wherein each of said first and second tweezer arms is configured with it hollow interior region, and wherein first and second canisters containing cryogenic matter are deployed within said hollow interior region of said first and second tweezer arms, respectively:

(b) two cryogenic matter release actuators, one said cryogenic matter release actuator being associated with each of said arms;

(c) an application tip associated with at least one of said arms, said application tip having at least one absorbent application element extending therefrom; and

(d) at least one cryogenic delivery passageway configured in each said arm so as to provide fluid communication between each said canister in each said arm and said absorbent application element;

wherein cryogenic matter released from each said canister is delivered to said absorbent application element such that the cryogenic matter is applied to said absorbent application element and said absorbent application element is configured to absorb and contain the cryogenic matter.

12. The device of claim **11**, wherein said application tip is deployed between distal ends of said arms so as to engage both said arms.

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